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(54) Title: NATURAL RUBBER PRODUCED FROM LATEX AND COMPOSITION COMPRISING THE SAME

(57) Abstract: Provided is a natural rubber obtained by drying a gathered natural rubber latex without coagulating, wherein a drum dryer and/or a conveyor type dryer are used for drying. Further, provided are a production process for a natural rubber-filler mixture prepared by adding at least one of carbon black and inorganic fillers to a natural rubber latex, a natural rubber added a viscosity stabilizer comprising hydrazide compounds or esters of aromatic or aliphatic polycarboxylic acid derivatives to these natural rubber and natural rubber-filler mixture, and a rubber composition which is prepared using the above natural rubbers and which is excellent in productivity, abrasion resistance and fracture resistance.

## INTERNATIONAL SEARCH REPORT

Int'l Application No  
PCT/JP 01/09552

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 7 C08C1/12	C08J3/00	C08L7/00	C08K3/22	B29B13/06
C08K5/10	C08K5/25			

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C08C C08J C08L C08K B29B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 531 781 A (COUTINHO) 1 January 1895 (1895-01-01) claims ---	15
X	US 765 167 A (CARDOSO DANIN) 19 July 1904 (1904-07-19) figures ---	15
X	GB 425 729 A (LINDE EISMASCH AG;GEORG ALEXANDER KRAUSE) 20 March 1935 (1935-03-20) page 1, line 18 - line 39 page 2, line 30 ---	15
X	US 1 740 994 A (JOHN MCGAVACK) 24 December 1929 (1929-12-24) page 1, line 80 ---	5,15
		-/-

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

## ° Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&\* document member of the same patent family

Date of the actual completion of the international search

1 November 2002

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## INTERNATIONAL SEARCH REPORT

Inte

ial Application No

PCT/JP 01/09552

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 851 507 A (URANECK CARL A ET AL) 9 September 1958 (1958-09-09) claims 9-14; examples ---	5,6,9
X	GB 1 394 186 A (BAYER AG) 14 May 1975 (1975-05-14) claim 8; examples ---	5,6,9
X	GB 1 472 064 A (MALAYSIA RUBBER RES INST) 27 April 1977 (1977-04-27) the whole document ---	5,6,9
X	EP 0 613 924 A (BRIDGESTONE CORP) 7 September 1994 (1994-09-07) the whole document ---	5,6,9
X	US 5 693 695 A (HIRATA YASUSHI ET AL) 2 December 1997 (1997-12-02) the whole document ---	5,6,9
X	US 2 040 550 A (GAMMETER JOHN R) 12 May 1936 (1936-05-12) claims; figures ---	15
X	GB 441 850 A (ARNELL THORP) 20 January 1936 (1936-01-20) page 4, line 70 - line 75; figures 1,4 ---	15
X	US 1 542 388 A (ERNEST HOPKINSON ET AL) 16 June 1925 (1925-06-16) page 3, line 62 - line 75 ---	15
X	EP 1 026 196 A (BRIDGESTONE CORP) 9 August 2000 (2000-08-09) claims; examples; table 1 ---	5,7,8, 10-14
X	US 2 404 582 A (BOSOMWORTH GEORGE P) 23 July 1946 (1946-07-23) claim 14; figures; examples ---	10,14, 15,18,20
X	EP 0 846 719 A (BRIDGESTONE CORP) 10 June 1998 (1998-06-10) the whole document -----	5,10-14, 18,19

**INTERNATIONAL SEARCH REPORT**International application No.  
PCT/JP 01/09552**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.: 1-4 because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
  
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 5-9, 15-17 (partially)

A process for obtaining a natural rubber latex in dried form, obtained by drum drying in the absence of filler additives; as well as a natural rubber composition comprising a viscosity stabilizer selected from a hydrazide compound

2. Claim : 5 7 8 10 (partially)

natural rubber composition comprising a viscosity stabilizer selected from polycarboxylates

3. Claims: 15-17 partially

A process for obtaining a natural rubber latex, in dried form, obtained by conveyor drying in the absence of filler additives

4. Claims: 10-14 18-20

A process for obtaining a natural rubber latex, in dried form, by drying in the presence of filler additives as well as a natural rubber composition comprising a filler

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

Continuation of Box I.2

Claims Nos.: 1-4

Present claims 1-4 relate to an extremely large number of possible compounds/products. In fact, the claims contain so many options, variables, possible permutations and provisos that a lack of clarity (and/or conciseness) within the meaning of Article 6 PCT arises to such an extent as to render a meaningful search of the claims impossible. Consequently, the search has been carried out for those parts of the application which do appear to be clear (and/or concise), namely the process claims recited in claims 15-20, the composition claims of claim 5-14.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

PCT/JP 01/09552

Patent document cited in search report	Publication date	Patent family member(s)		Publication date	
US 531781	A	NONE			
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